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DATE: Wednesday, September 29, 2004

<b>Hide?</b>	<b>Set Name</b>	<b>Query</b>	<b>Hit Count</b>
<i>DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI; PLUR=YES; OP=ADJ</i>			
<input type="checkbox"/>	L10	producing glycoconjugate.clm.	5
<input type="checkbox"/>	L9	glycosyltransferase and galactokinase with dna.clm.	1
<input type="checkbox"/>	L8	L3 with galactokinase	0
<input type="checkbox"/>	L7	L3 and galactokinase	1
<input type="checkbox"/>	L6	L3 and l4	0
<input type="checkbox"/>	L5	sugar nucleotide regenerating enzyme?	3
<input type="checkbox"/>	L4	sugar nucleotide enzyme?	23
<input type="checkbox"/>	L3	glycosyltransferase with dna.clm.	19
<input type="checkbox"/>	L2	L1 and galactokinase	2
<input type="checkbox"/>	L1	cell with glycoconjugate.clm.	25

END OF SEARCH HISTORY

## Hit List

[Clear](#) [Generate Collection](#) [Print](#) [Fwd Refs](#) [Bkwd Refs](#)  
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Search Results - Record(s) 1 through 2 of 2 returned.

☐ 1. Document ID: US 20020150968 A1

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L2: Entry 1 of 2

File: PGPB

Oct 17, 2002

PGPUB-DOCUMENT-NUMBER: 20020150968

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020150968 A1

TITLE: Glycoconjugate and sugar nucleotide synthesis using solid supports

PUBLICATION-DATE: October 17, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Wang, Peng G.	Troy	MI	US	
Chen, Xi	Norristown	PA	US	

US-CL-CURRENT: [435/53](#); [435/175](#), [435/68.1](#), [435/96](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	MMO	Draw. D.
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☐ 2. Document ID: US 20020132320 A1

L2: Entry 2 of 2

File: PGPB

Sep 19, 2002

PGPUB-DOCUMENT-NUMBER: 20020132320

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020132320 A1

TITLE: Glycoconjugate synthesis using a pathway-engineered organism

PUBLICATION-DATE: September 19, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Wang, Peng George	Troy	MI	US	
Chen, Xi	Norristown	PA	US	
Liu, Ziye	Detroit	MI	US	
Zhang, Wei	Detroit	MI	US	

US-CL-CURRENT: [435/193](#); [435/101](#), [435/200](#), [435/320.1](#), [435/325](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	FIGs	Drawings
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Clear	Generate Collection	Print	Fwd Refs	Bkwd Refs	Generate OACS
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Terms	Documents
L1 and galactokinase	2

Display Format:  [Change Format](#)

[Previous Page](#)

[Next Page](#)

[Go to Doc#](#)

[First Hit](#) [Fwd Refs](#)[Previous Doc](#)[Next Doc](#)[Go to Doc#](#)

Generate Collection

Print

L1: Entry 16 of 25

File: USPT

Oct 28, 2003

US-PAT-NO: 6638513

DOCUMENT-IDENTIFIER: US 6638513 B2

TITLE: Neisseria meningitidis serogroup B Glycoconjugates

DATE-ISSUED: October 28, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Seid; Robert	San Francisco	CA		

US-CL-CURRENT: [424/197.11](#); [424/184.1](#), [424/203.1](#), [424/234.1](#), [424/250.1](#), [424/257.1](#),  
[424/831](#), [514/23](#), [536/123.1](#)

## CLAIMS:

What is claimed is:

1. A glycoconjugate comprising substantially homogenous sized Neisseria meningitidis serogroup B (MenB) capsular oligosaccharides in which sialic acid residue N-acetyl groups are replaced with saturated N-propionyl groups, wherein said MenB oligosaccharides are covalently attached to a protein carrier molecule, have an average degree of polymerization (Dp) of 10 to 20, and further comprise a C3-C16 long-chain aliphatic lipid covalently attached thereto; and wherein said glycoconjugate has a saccharide-to-protein ratio ranging from 0.10 to 0.25 by weight, and elicits antibodies that do not bind to the human neuroblastoma cell line CHP-134.
2. The glycoconjugate of claim 1 wherein the carrier molecule is a bacterial toxoid.
3. The glycoconjugate of claim 2 wherein the bacterial toxoid is tetanus toxoid.
4. The glycoconjugate of claim 1 wherein the carrier molecule is a nontoxic mutant bacterial toxoid.
5. The glycoconjugate of claim 4 wherein the mutant bacterial toxoid is CRM.sub.197.
6. The glycoconjugate of claim 1 wherein the MenB OS derivatives have an average Dp of about 12 to about 18.
7. A glyconjugate comprising substantially homogenous sized Neisseria meningitidis serogroup B (MenB) capsular oligosaccharides in which sialic acid residue N-acetyl are replaced with saturated N-propionyl groups, wherein said MenB oligosaccharides are covalently attached to a CRM.sub.197 toxoid protein carrier, have an average Dp of 12 to 18, and further comprise a C3-C16 long-

chain aliphatic lipid covalently attached thereto, and wherein said glycoconjugate has a saccharide-to-protein ratio ranging from 0.10 to 0.25 by weight, and elicits antibodies that do not bind to the human neuroblastoma cell line CHP-134.

8. A vaccine composition comprising the combination of: a glycoconjugate formed from substantially homogenous sized Neisseria meningitidis serogroup B (MenB) capsular oligosaccharides in which sialic acid residue N-acetyl groups are replaced with saturated N-propionyl groups wherein said MenB oligosaccharides are covalently attached to a protein carrier molecule, have an average degree of polymerization (Dp) of 10 to 20, and further comprise a C3-C16 long-chain aliphatic lipid covalently attached thereto, and wherein said glycoconjugate has a saccharide-to-protein ratio ranging from 0.10 to 0.25 by weight and, elicits antibodies that do not bind to the human neuroblastoma cell line CHP-134; and a pharmaceutically acceptable excipient.

9. The vaccine composition of claim 8 wherein the MenB oligosaccharides have an average Dp of about 12 to about 18.

10. A vaccine composition comprising the combination of: a glycoconjugate formed from substantially homogenous sized Neisseria meningitidis serogroup B (MenB) capsular oligosaccharides in which sialic acid residue N-acetyl groups are replaced with saturated N-propionyl groups, wherein said MenB oligosaccharides are covalently attached to a CRM.sub.197 toxoid protein carrier and have an average degree of polymerization (Dp) of 12 to 18, and the MenB OS derivatives further comprise a C3-C16 long-chain aliphatic lipid covalently attached thereto and wherein said glycoconjugate has a saccharide-to-protein ratio ranging from 0.10 to 0.25 by weight and, elicits antibodies that do not bind to the human neuroblastoma cell line CHP-134; and a pharmaceutically acceptable excipient.

11. The vaccine composition of claim 8 further comprising an adjuvant.

12. The vaccine composition of claim 10 further comprising an adjuvant.

[Previous Doc](#)

[Next Doc](#)

[Go to Doc#](#)

[First Hit](#) [Fwd Refs](#) [Previous Doc](#) [Next Doc](#) [Go to Doc#](#)

☐ [Generate Collection](#) [Print](#)

L1: Entry 19 of 25

File: USPT

May 21, 2002

US-PAT-NO: 6391857

DOCUMENT-IDENTIFIER: US 6391857 B1

TITLE: Methods and compositions for endothelial binding

DATE-ISSUED: May 21, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Magnani; John L.	Rockville	MD	20853	
Butcher; Eugene C.	Portolla Valley	CA		
Berg; Ellen L.	Fremont	CA		

US-CL-CURRENT: 514/25; 424/184.1, 514/53, 514/54, 514/61, 514/62, 514/8, 530/395, 530/807, 536/1.11, 536/4.1, 536/55, 536/55.1, 536/55.2

CLAIMS:

What is claimed is:

1. A method for decreasing the binding of leukocytes or platelets to endothelial cells, said method comprising:

adding to a combination of cells comprising endothelial cells and leukocytes or platelets, wherein selectins or carbohydrate ligands thereof are expressed in an amount sufficient to promote the binding of leukocytes or platelets to endothelial cells, a glycoconjugate that recognizes a carbohydrate domain common to sialyl-Le.sup.x and sialyl-Le.sup.a and that is cross-reactive or competitive with sialyl-Le.sup.a or the cutaneous lymphocyte associated antigen in binding to a selectin, with the proviso that said glycoconjugate is not a glycoconjugate of sialyl-Le.sup.x or substituted sialyl-Le.sup.x.

2. A method according to claim 1, wherein said glycoconjugate comprises sialic acid and fucopyranose bonded to a group comprising a conformationally constrained chain of at least 2 atoms.

3. A method according to claim 2, wherein said group has a galactose, glucose or derivative thereof.

4. A method according to claim 3, wherein said galactose is bonded as the .beta.-anomer to a glucose, glucoseamine or N-acetyl glucoseamine.

5. A method according to claim 4, wherein said glycoconjugate is a glycoconjugate sialyl-Le.sup.a or derivative thereof.

[Previous Doc](#) [Next Doc](#) [Go to Doc#](#)

## Hit List

[Clear](#) [Generate Collection](#) [Print](#) [Fwd Refs](#) [Bkwd Refs](#)  
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Search Results - Record(s) 1 through 3 of 3 returned.

☐ 1. Document ID: US 20020150968 A1

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L5: Entry 1 of 3

File: PGPB

Oct 17, 2002

PGPUB-DOCUMENT-NUMBER: 20020150968  
PGPUB-FILING-TYPE: new  
DOCUMENT-IDENTIFIER: US 20020150968 A1

TITLE: Glycoconjugate and sugar nucleotide synthesis using solid supports

PUBLICATION-DATE: October 17, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Wang, Peng G.	Troy	MI	US	
Chen, Xi	Norristown	PA	US	

US-CL-CURRENT: [435/53](#); [435/175](#), [435/68.1](#), [435/96](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	NUMC	Draw. De
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☐ 2. Document ID: US 20020132320 A1

L5: Entry 2 of 3

File: PGPB

Sep 19, 2002

PGPUB-DOCUMENT-NUMBER: 20020132320  
PGPUB-FILING-TYPE: new  
DOCUMENT-IDENTIFIER: US 20020132320 A1

TITLE: Glycoconjugate synthesis using a pathway-engineered organism

PUBLICATION-DATE: September 19, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Wang, Peng George	Troy	MI	US	
Chen, Xi	Norristown	PA	US	
Liu, Ziyue	Detroit	MI	US	
Zhang, Wei	Detroit	MI	US	

US-CL-CURRENT: [435/193](#); [435/101](#), [435/200](#), [435/320.1](#), [435/325](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw D
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☐ 3. Document ID: AU 2002314707 A1, US 20020132320 A1, WO 200277165 A2

L5: Entry 3 of 3

File: DWPI

Oct 8, 2002

DERWENT-ACC-NO: 2003-165735

DERWENT-WEEK: 200432

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TITLE: New vector comprising 2 or more genes encoding sugar-nucleotide regenerating enzymes and one or more gene encoding glycosyltransferases, useful for producing glycoconjugates, including oligosaccharides in large-scale

INVENTOR: CHEN, I; LIU, Z ; WANG, P G ; ZHANG, W ; CHEN, X

PRIORITY-DATA: 2001US-0758525 (January 10, 2001)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
AU 2002314707 A1	October 8, 2002		000	C12P019/04
US 20020132320 A1	September 19, 2002		051	C12P019/04
WO 200277165 A2	October 3, 2002	E	000	C12N000/00

INT-CL (IPC): C12 N 0/00; C12 N 9/10; C12 N 9/24; C12 N 15/00; C12 P 19/04

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw D
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Clear	Generate Collection	Print	Fwd Refs	Bkwd Refs	Generate OACS
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Terms	Documents
sugar nucleotide regenerating enzyme?	3

Display Format:

[Previous Page](#)

[Next Page](#)

[Go to Doc#](#)



[First Hit](#) [Fwd Refs](#)[Previous Doc](#)[Next Doc](#)[Go to Doc#](#)

End of Result Set

☐ [Generate Collection](#) [Print](#)

L10: Entry 5 of 5

File: USPT

Apr 4, 2000

US-PAT-NO: 6046040

DOCUMENT-IDENTIFIER: US 6046040 A

TITLE: Method for producing glycoconjugates

DATE-ISSUED: April 4, 2000

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Nishiguchi; Susumu	Ohtsu			JP
Maekawa; Yoshihiko	Ohtsu			JP
Nishimura; Shin-ichiro	Sapporo			JP
Yamada; Kuriko	Ishikari			JP

US-CL-CURRENT: [435/97](#); [435/100](#), [435/101](#), [435/134](#), [435/135](#), [435/174](#), [435/176](#),  
[435/177](#), [435/72](#), [435/74](#), [435/84](#), [435/99](#)

## CLAIMS:

What is claimed is:

1. A method for producing glycoconjugate, which comprises the steps of:

(i) binding a sugar residue to a side chain of a water-soluble polymer via a linker having a selectively cleavable linkage to give a primer, and bringing said primer into contact with an immobilized glycosyltransferase in the presence of a sugar nucleotide, to transfer a sugar residue of said sugar nucleotide to the sugar residue of said primer;

(ii) elongating a sugar chain by transfer of a plurality of sugar residues by repeating step (i) at least once;

(iii) optionally removing a by-produced nucleotide or an unreacted sugar nucleotide;

(iv) optionally repeating steps (i)-(iii); and

(v) optionally releasing the resultant glycoconjugate sugar chain by selectively cleaving the cleavable linkage in the linker from the primer, which connects the sugar chain elongated by the transfer of the plurality of sugar residues.

2. The method of claim 1, wherein the water-soluble polymer is a polymer or a copolymer of acrylic or methacrylic monomers of acrylic acid, methacrylic acid, acrylamide, methacrylamide and derivatives thereof, or a copolymer of an

acrylic or methacrylic monomer and a different vinyl compound.

3. The method of claim 1, wherein the selectively cleavable linkage in the linker can be cleaved by hydrolase in an aqueous solvent.

4. The method of claim 1, wherein the selectively cleavable linkage in the linker can be cleaved by protease or ceramide glycanase in an aqueous solvent.

5. The method of claim 1, wherein the water-soluble polymer having a sugar residue linked to its side chain via a linker having a selectively cleavable linkage is a water-soluble polymer having a group of the formula (I) or formula (II) linked to its side chain: ##STR37## wherein R.sup.1 is a .beta.-galactose residue or H, R.sup.2 is alkyl or alkenyl having 6 to 20 carbon atoms and R.sup.3 is alkylene having 5 to 19 carbon atoms, ##STR38## wherein R.sup.4 is alkylene having 2 to 20 carbon atoms, R.sup.5 is alkylene having 5 to 19 carbon atoms and Ac is acetyl.

6. The method of claim 1, wherein the immobilized glycosyltransferase is a glycosyltransferase immobilized onto a carrier by a covalent bond.

7. The method of claim 1, wherein the carrier is a crosslinked dextran or a crosslinked agarose with or without an ion-exchange group linked thereto.

8. A method for producing a sphingoglycolipid, which comprises the steps of:

(i) binding a group of the formula (I) to a side chain of a water-soluble polymer to give a primer, and bringing said primer into contact with an immobilized glycosyltransferase in the presence of a sugar nucleotide, to transfer a sugar residue of said sugar nucleotide to the sugar residue of said primer, ##STR39## wherein R.sup.1 is a .beta.-galactose residue or H, R.sup.2 is alkyl or alkenyl having 6 to 20 carbon atoms and R.sup.3 is alkylene having 5 to 19 carbon atoms;

(ii) elongating a sugar chain by transfer of a plurality of sugar residues by repeating step (i) at least once;

(iii) optionally removing a by-produced nucleotide or an unreacted sugar nucleotide; and

(iv) optionally repeating steps (i)-(iii); and

(v) reacting a ceramide glycanase with the primer in the presence of a ceramide, wherein an oligosaccharide comprising the plurality of sugar residues is transferred from the primer to the ceramide.

[Previous Doc](#)

[Next Doc](#)

[Go to Doc#](#)